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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HARRITY SNYDER, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030			EXAMINER NGUYEN BA, HOANG VU A	
			ART UNIT 2623	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/659,739	Applicant(s) BESER, NURETTIN BURCAK	
	Examiner Hoang-Vu A. Nguyen-Ba	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/29/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed September 11, 2003.
2. Claims 1-41 have been examined.

Priority

3. The priority date considered for this application is September 12, 2002, which is the filing date of the Provisional Application No. 60/409,982.

Oath/Declaration

4. The Office acknowledges receipt of a properly signed oath/declaration filed December 8, 2003.

Drawings

5. The drawings filed September 11, 2003 are accepted by the examiner.

Claim Rejections – 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejection under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States and was published under Article 21(2) of such treaty in the English language

7. Claims 1-41 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,891,858 to Mahesh et al. ("Mahesh").

Claim 1

Mahesh discloses at least:

setting a modem to transmit on a first upstream channel using first transmission characteristics (see at least 5:20-28);

monitoring a quality of the modem upstream transmission on the first upstream channel (see at least FIGs. 2-3); and

setting the modem to transmit on a second upstream channel using second transmission characteristics based on the monitored quality (see at least FIG. 4).

It should be noted that the claimed "first channel" and "second channel" are not different physical channels but rather "virtual channels" as described in Applicant's specification at p. 8. According to Applicant's disclosure, a virtual channel may be associated with different transmission characteristics of cable modem and such different transmission characteristics may include a different channel profile, such as symbol rate, frequency, preamble pattern, and/or burst profile. The different burst profile may include a different modulation, data block size (Reed-Solomon block size), error correction (e.g., Reed-Solomon error correction), etc. (see page 8).

In light of Applicant's disclosure, the claimed first and second channels are interpreted to mean different modulation profiles, such as modulation profiles A and B as taught in Mahesh.

Claim 9

Mahesh discloses at least *a cable modem termination system* (see at least FIG. 5, device 804), *comprising:*

a memory configured to store instructions (see at least FIG. 5, component 857);
a communication interface (see at least FIG. 5, component 820) *configured to:*
receive transmissions comprising first transmission characteristics from a modem on a
first upstream channel (see at least FIG. 5, function performed by devices 812,
814; 5:20-28), *and*

measure a quality of the received upstream transmissions from the modem (see at
least FIGs. 2-3); *and*

a processor configured to execute the instructions in the memory (see at least FIG.
5, component 855) *to:*

monitor the measured quality of the received transmissions (see at least
FIGs. 2-3), *and*

send a message, via the communication interface, instructing the modem to
transmit on second upstream channel using second transmission characteristics based
on the monitored quality (see at least FIG. 4 and discussion in Claim 1
related to modulation profiles).

Claim 17

Mahesh discloses at least *a method of controlling transmission characteristics of*
cable modems, comprising:

monitoring upstream transmission quality of one or more cable modems (see at least
FIGs. 2-3); *and*

commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored quality (see at least FIG. 4).

Claim 22

Mahesh discloses at least *a cable modem termination system* (see at least FIG. 5, device 804), *comprising:*

- a memory configured to store instructions* (see at least FIG. 5, component 857);
- and*
- a processor configured to execute the executions in the memory* (see at least FIG. 5, component 855) *to perform the method steps of Claim 17 (see Claim 17).*

Claim 27

Mahesh discloses *a method of changing transmission characteristics at a modem in a cable modem system, comprising:*

- receiving a command to select different upstream transmission characteristics* (see at least FIG. 4 and 11:14-24);
- selecting the different upstream transmission characteristics in accordance with the command* (see at least FIG. 4 and 11:14-24); *and*
- transmitting on an upstream channel using different upstream transmission characteristics* (see at least FIG. 4 and 11:25-31).

Claim 30

Mahesh discloses at least *a cable modem* (see at least FIG. 1, device 120). Although, Mahesh does not explicitly show:

- a memory configured to store instructions;*

a communication interface configured to receive an instruction to select different upstream transmission characteristics; and
a processing unit.

However, these devices are deemed inherent to Mahesh and well-known in the art (see FIG. 3 - Prior Art - of U.S. Patent No. 6,898,755 to Hou, same assignee with the instant application; it should be noted that Hou is not applied as a secondary art of record but is merely used to show that the claimed features are admitted by applicant to be known in the art). Without these components, the cable modems of Mahesh cannot change the modulation profile as shown in FIGs. 2-4 of Mahesh.

Mahesh further discloses the processing unit of the cable modem to:

select the different upstream transmission characteristics in accordance with the instruction (see at least FIG. 4 and 11:14-24); and
initiate transmission on an upstream channel using different upstream transmission characteristics (see at least FIG. 4 and 11:25-31).

Claim 33

Mahesh discloses at least *a method of changing virtual upstream channels in a cable modem system, comprising:*

monitoring upstream signal qualities associated with one or more cable modems (see at least FIGs. 2-3); and
selectively switching at least one of the one or more cable modems between virtual upstream channels based on the signal quality monitoring (see at least FIG. 4 and 11:14-31).

Claim 37

Mahesh discloses at least *a cable modem termination system* (see at least FIG. 5, device 804), *comprising:*

a memory configured to store instructions (see at least FIG. 5, component 857);

a communication interface (see at least FIG. 5, component 820) *configured to:*

measure signal qualities of upstream transmissions associated with one or more cable modems (see at least FIGs. 2-3); *and*

a processor configured to execute the instructions in the memory (see at least FIG. 5, component 855) *to:*

monitor the measured quality of the received transmissions (see at least FIGs. 2-3), *and*

selectively command at least one of the one or more cable modems to switch between virtual upstream channels based on the signal quality monitoring (see at least FIG. 4 and discussion in Claim 1 related to modulation profiles).

Claim 41

Mahesh discloses at least *a system for controlling transmission characteristics of a cable modem* (see at least FIG. 1), *comprising:*

means for monitoring upstream transmission quality of one or more cable modems (see at least FIGs. 2-4); *and*

means for commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored quality (see at least FIGs. 2-4).

Claims 2 and 10

The rejection of the respective base claim is incorporated. Mahesh further discloses:

determining whether the quality of the modem upstream transmission is inadequate
(see at least FIG. 2); and

setting the second transmission characteristics to more robust transmission characteristics based on the determination (see at least FIGs. 2-4; 11:32-44).

Claims 3 and 11

The rejection of the respective base claim is incorporated. Mahesh further discloses:

determining whether the quality of the modem upstream transmissions is greater than a threshold (see at least FIG. 2); and

setting the second transmission characteristics to better performing transmission characteristics based on the determination (see at least FIGs. 2-4).

Claims 4 and 12

Rejections of the respective base claim and intervening claim are incorporated. Mahesh further discloses *wherein the first transmission characteristics comprise one of 16 quadrature amplitude modulation (16QAM), 8QAM, 32QAM and 64 QAM, and the second transmission characteristics comprise quadrature phase shift keying (QPSK) modulation* (see at least FIGs. 2-4; 5:39-60).

Claims 5, 13, 35, 36, 39 and 40

Rejections of the respective base claim and intervening claim are incorporated. further discloses *wherein the first transmission characteristics comprise quadrature phase shift keying (QPSK) modulation and the second transmission characteristics comprise at least one of 16 quadrature amplitude modulation (16QAM), 8QAM, 32QAM and 64QAM* (see at least FIGs. 2-4; 5:39-60).

Claims 6 and 14

The rejection of the respective base claim is incorporated. Mahesh does not specifically disclose *wherein the first upstream channel comprises a first time division of a first frequency* (see at least 14:33-42 and discussion related to modulation profiles in Claim 1).

Claims 7 and 15

Rejections of the respective base claim and intervening claim are incorporated. Mahesh further discloses *wherein the second upstream channel comprises a second time division of the first frequency* (see at least 14:33-42 and discussion related to modulation profiles in Claim 1).

Claims 8, 16, 21 and 26

The rejection of the respective base claim is incorporated. Mahesh further discloses *wherein the quality comprises at least one of bit-error-rate and signal-to-noise ration* (see at least FIGs. 2-4; e.g., SNR and FEC).

Claims 18 and 23

The rejection of base claim 17 is incorporated. Mahesh further discloses *commanding the at least one of the one or more cable modems to transmit on a different upstream virtual channel based on the monitored quality* (see at least FIGs. 2-4 and discussion in Claim 1 related to virtual channels).

Claims 19 and 24

The rejection of base claim 17 is incorporated. Mahesh further discloses *wherein commanding at least one of the one or more modems to change its transmission characteristics comprises:*

commanding the at least one of the one or more modems to change its modulation based on the monitored quality (see at least FIGs. 2-4)

Claims 20 and 25

Rejections of the respective base claim and intervening claim are incorporated. Mahesh further discloses *commanding the at least one of the one or more modems to change from quadrature phase shift keying (QPSK) modulation to at least one of 16 quadrature amplitude modulation (16QAM), 8 QAM, 32QAM and 64QAM* (see at least FIG. 2, step 212).

Claims 28, 31, 34 and 38

The rejection of the base claim is incorporated. Mahesh further discloses *receiving a plurality of messages, each message describing different transmission characteristics* (see at least FIG. 4 and 11:14-24).

Claims 29 and 32

The rejection of the base claim is incorporated. Mahesh further discloses *wherein the command indicates the use of one of the plurality of messages for selecting different upstream transmission characteristics* (see at least FIG. 4 and 11:14-44).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu "Antony" Nguyen-Ba whose telephone number is (571) 272-3701. The examiner can normally be reached on Tuesday-Friday from 7:00 am to 5:30 pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, John Miller can be reached at (571) 272-7353.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2600 Group receptionist (571) 272-2600.

Information regarding the status of an application may be obtained from

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the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



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January 24, 2008